TABLE NO: [ ]

MULTIMEDIA UNIVERSITY TM

STUDENT ID NO

					4	5	1	2	7

MULTIMEDIA UNIVERSITY

FINAL EXAMINATION

TRIMESTER 1, 2019/2020

MMA 1033 – VISUAL PROGRAMMING

(All Sections / Groups)

21 OCTOBER 2019
9.00am – 11.00am
(2 Hours)

INSTRUCTION TO STUDENT

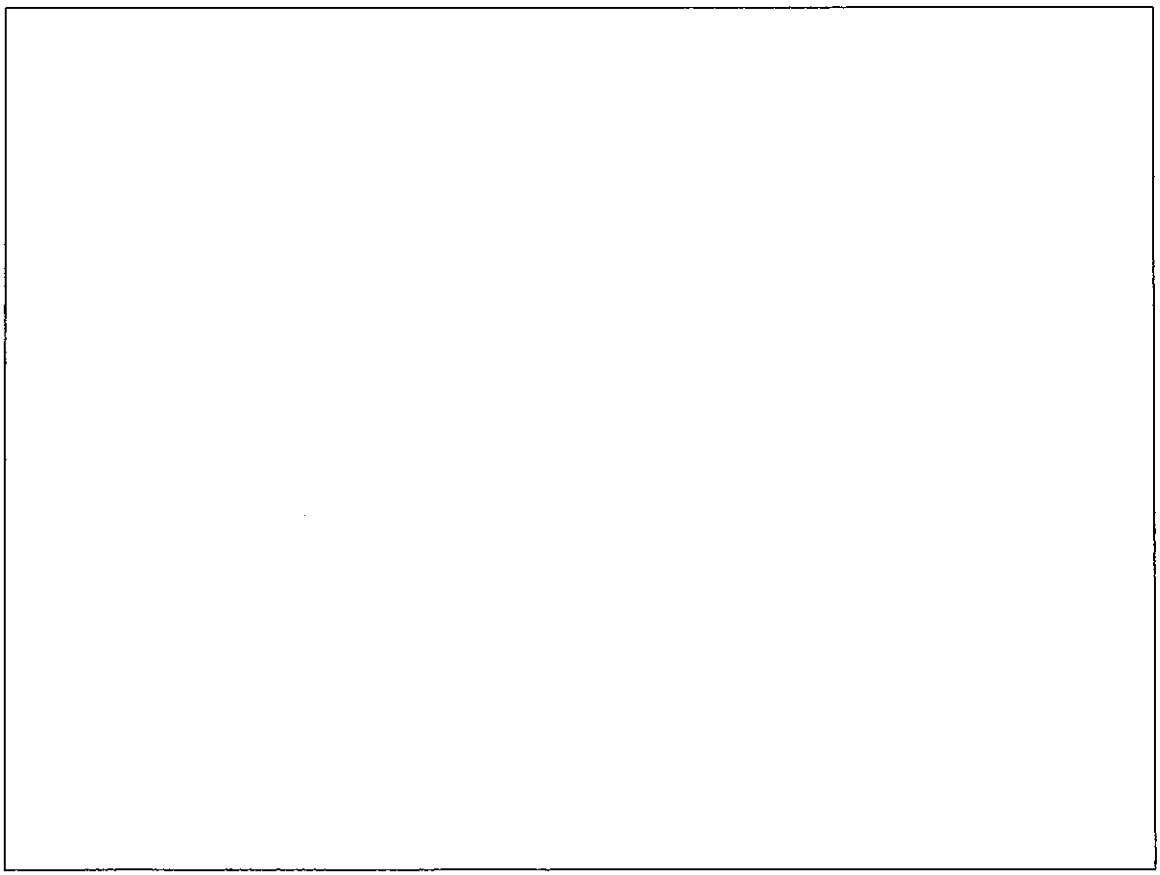
1. This question paper consists of 12 pages (including the front page).
2. Answer **ALL** questions.
3. Print all your answers in the answer box associated with each question.
4. Write your **STUDENT ID NUMBER** on the question paper top right hand corner on this page.

QUESTION 1

(a) Based on the processing codes below, draw a shape as you will expect on the *Display Windows*.

```
size(200,200);
beginShape();
   vertex(20,30);
   vertex(50,30);
   vertex(50,100);
   vertex(20,100);
   vertex(70,120);
   vertex(120,100);
   vertex(90,100);
   vertex(90,30);
   vertex(120,30);
   vertex(70,10);
endShape(CLOSE);
```

[3 marks]



Continued...

(b) Explain the code below and each values in the function size(), fill() and rect().

i) size(480,240);

ii) fill (255, 0);

iii) rect (10, 20, 30, 50);

[4 marks]

(c) The following are the functions in *Processing* to generate the line, ellipse, and triangle. Draw the shapes as you will see on the *Display Windows*.

i) ellipse(50,50,90,10);

ii) triangle(10,60,30,30,50,100);

iii) line(30,10,90,10);

[3 marks]

Continued...

QUESTION 2

(a) What is the values of x, y and z will be displayed on OUTPUT panel from this declaration of variables and initialization and partially run the program?

```
float x = 3.5; float y;
y = x * 3.5;
float z = x+y/2;
println(x,y,z);
```

[3 marks]

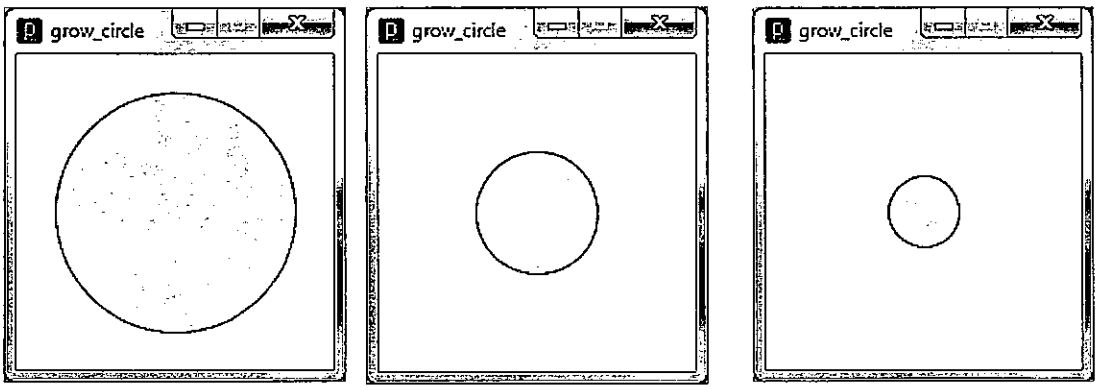
x=

y=

z=

(b) Complete your codes using Processing to make the circle grow in size.

[3 marks]



Continued...

```
int circleSize=100;
int circleX=150;
int circleY=150;

void setup() {
 size(200,200);
}

void draw()  {
 background(255);
 stroke(2);
 fill(150);
 ellipse(_____,_____,_____,_____);
 _____;
}
```

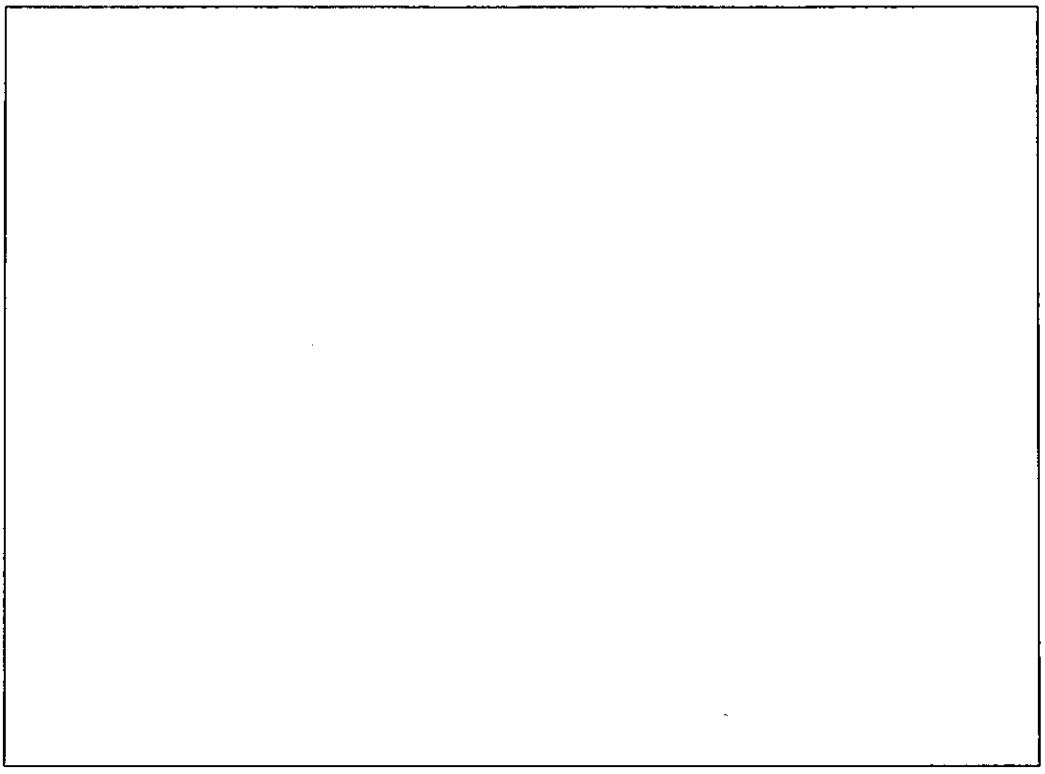
Continued...

(c)Based on the processing codes below, draw the shape as you will expect on the *Display Windows*.

[4 marks]

```
size(400,200);
int x=10;
int y=20;
int h=30;

rect(x,y,200,h);
x=x+30;
rect(x,y+h,200,h);
x=x+60;
rect(x,y+h*2,200,h);
x=x+90;
rect(x,y+h*3,200,h);
```



Continued...

QUESTION 3

(a) Study the following code:

```
float grade = random(0,100);
if (grade > 90) {
    println("Assign letter grade A.");
    } else if (grade > 80) {
    println("Assign letter grade B.");
    } else if (grade > 70) {
     println("Assign letter grade C.");
    } else if (grade > 60) {
    println("Assign letter grade D.");
    } else {
    println("Assign letter grade F.");
    }
```

What is the values will be displayed on OUTPUT panel from this code if

i) grade=90 ?

ii) grade=80 ?

iii) grade=60 ?

iv) grade=50 ?

[4 mark]

i) ii) iii)

Continued...

(b) Write the output of this function.

```
int score = 70;
while (score<80) {
    println ("Well Done!");
    score+=1;
    }
```

[2 mark]

(c) Declare and initialize the elements of an array all at once. Write the two lines of declaration and initialization of the array using processing based on the following description.

"...Declare and initialize a list of array with 6 integer elements all together. Name the array arrayOfStaffNumber. Declare and initialize another array with 6 floating point elements all together. Name the array ArrayOfHeight"

[4 marks]

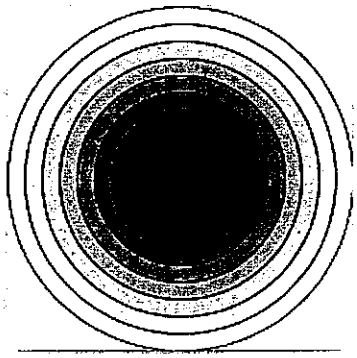
Continued...

QUESTION 4

(a) Rewrite the coding below using the ***while*** loop.

```
size(200, 200);
background(255);

for (float w = width; w > 0; w -= 20) {
  stroke(0);
  fill(w);
  ellipse(width/2, height/2, w, w);
}
```



[4 marks]

Continued...

(b) Write the codes that will load an image name ***mypic.jpg*** into an output screen size of 300x300. Start the display of the image at location point (10,10). Your code should consist setup() and draw().

[6 marks]

Continued...

QUESTION 5

(a) What is the function in Processing? [1 mark]

(b) Why the function is used in Processing? [2 marks]

(c) Predict the output of this program by writing out what would appear in the *message window*. [6 marks]

```
void setup() {
    println("a");
    function1();
    println("b");
}

void draw() {
    println("c");
    function1();
    println("d");
    function2();
    noLoop();
}

void function1() {
    println("e");
    println("f");
}

void function2() {
    println("g");
    function1();
    println("h");
}
```

Continued...

(d) What is the purpose we use the function "noLoop()" in the coding in (c)? [1 mark]

End of Pages...